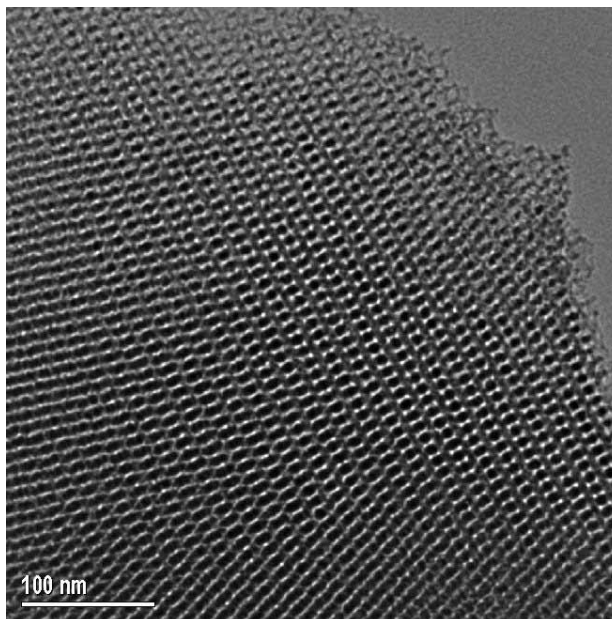
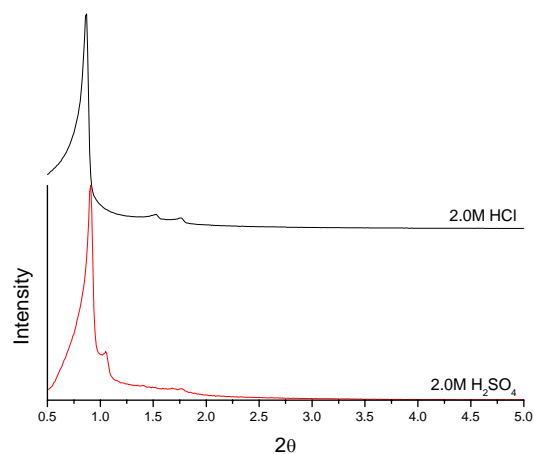
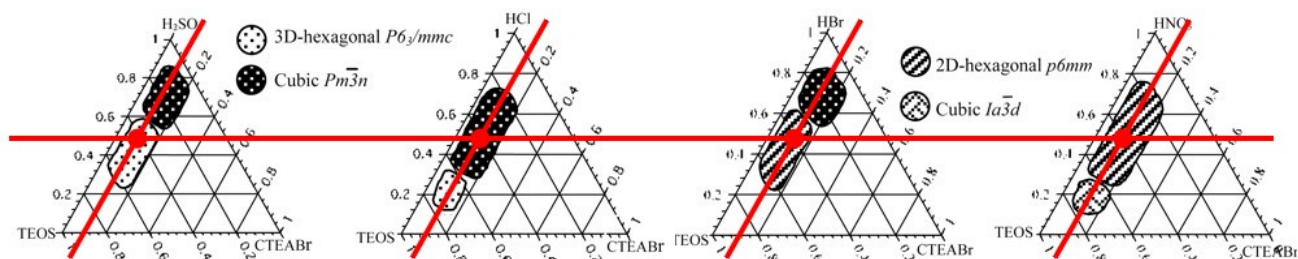


# Support Information



SI 1. (left) XRD patterns of materials synthesized with 2.0M HCl and 2.0M H<sub>2</sub>SO<sub>4</sub>, respectively. (right) TEM image of the calcined mesoporous silica with *Ia3d* symmetry synthesized by 2.0M H<sub>2</sub>SO<sub>4</sub> taken along the [311] direction.



SI 2. From the diagram reported by Che et al., the hydrophobic sequence is *Ia3d* > *p6mm* > *P63/mmc* > *Pm3n*. When the reactant compositions are identical except that different acids are employed (the cross point marked in each phase diagram), the use of H<sub>2</sub>SO<sub>4</sub> give rises to *P63/mmc* mesophase while the use of HCl leads to more hydrophilic *Pm3n* structure. Therefore, it may be concluded that the hydrophobic anion sequence is most likely represented as SO<sub>4</sub><sup>2-</sup> (HSO<sub>4</sub><sup>-</sup>) > Cl<sup>-</sup>.